



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/827,076	04/05/2001	Stephen A. Empedocles	019916-004300US	6626

20350 7590 11/17/2003

TOWNSEND AND TOWNSEND AND CREW, LLP
TWO EMBARCADERO CENTER
EIGHTH FLOOR
SAN FRANCISCO, CA 94111-3834

EXAMINER

TRAN, MY CHAU T

ART UNIT

PAPER NUMBER

1639

DATE MAILED: 11/17/2003

21

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/827,076

Applicant(s)

EMPEDOCLES ET AL.

Examiner

My-Chau T. Tran

Art Unit

1639

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 August 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-19 and 58-75 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3-19, and 58-75 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Applicant's amendment filed 8/13/03 in Paper No. 20 is acknowledged and entered.

Claim 4 is amended by the amendment. Claims 60-75 are added by the amendment.

2. Claims 1, 3-19, and 58-75 are pending.

Drawings

3. The drawings were received on 8/13/03. These drawings are acceptable.

4. Claims 1, 3-19, and 58-75 are treated on the merit in this Office Action.

Maintained Rejections

Claim Rejections - 35 USC § 102

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 1 and 59 are rejected under 35 U.S.C. 102(e) as being anticipated by Kauvar et al. (US Patent 6,492,125 B2; *filing date of 6/14/1999*).

The instant claimed "system" comprises of a plurality of spatially resolved (claim 59) labels generating identifiable spectra, a first family of the labels generating identifiable spectra having first signal, a detector, and an analyzer coupled to the detector. The spectra comprise a

Art Unit: 1639

plurality of signals for each label, wherein some of the label being distributed in two dimensions (claim 59). The first label of the first family included an associated second signal.

Kauvar et al. disclose labels (system) that are particulate materials, which contain a least two different signal-generating moieties (col. 2, lines 39-41). The moieties generating signals that can be distinguished in situ, such as light of different wavelengths (col. 2, lines 56-61). These labels are distinguishable by any instrumentation which contains separate means for each of the at least two in situ signals generated. The detector comprise of appropriate filters or other means, such as prism or grating (col. 2, lines 61-65). In addition to detect the location of individual analytes on a microscopic level (claim 59; spatially resolved labels), the label may be used macroscopically to map physiological phenomena (col. 3, lines 4-7). Therefore, the labels of Kauvar et al. anticipate the instant claimed system.

Response to Arguments

7. Applicant's argument directed to the above rejection under 35 USC 102(e) as being anticipated by Kauvar et al. (US Patent 6,492,125 B2; *filing date of 6/14/1999*) for claims 1 and 59 was considered but they are not persuasive for the following reasons.

Applicant argues that the system of Kauvar et al. does not anticipate the presently claimed system because 1) Kauvar et al. does not teach the limitation of “[a] detector that simultaneously images spectra of a plurality of labels upon a surface”, and 2) Kauvar et al. does not teach the limitation of an open optical path of claim 59. Thus the system of Kauvar et al. does not anticipate the presently claimed system.

Applicant's argument that Kauvar et al. does not teach the limitation of “[a] detector that simultaneously images spectra of a plurality of labels upon a surface” is not convincing since

Art Unit: 1639

Kauvar et al. do teach this limitation. Kauvar et al. disclose that a detector that provides fluorescence excitation and the capacity to detect three separate wavelength of light (col. 4, lines 63-64). In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., an open optical path having an open cross-section with significant first and second orthogonal dimensions is used in contrast to the slit or point apertures) are not recited in the rejected claim 59. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Therefore the system of Kauvar et al. does anticipate the presently claimed system.

8. Claim 58 is rejected under 35 U.S.C. 102(e) as being anticipated by Herron et al. (US Patent 6,108,463; 102(e) date 8/18/1998).

The instant claimed "system" comprises of a plurality of spatially resolved labels generating identifiable spectra, a first family of the labels generating identifiable spectra having first signal, a detector, and a spatial position indicator to identify label positions. The spectra comprise a plurality of signals for each label. The first label of the first family included an associated second signal.

Herron et al. disclose a waveguide sensor (system) that comprise of different capture molecules, tracer molecules, and labels with the purpose of detecting different analytes of interest in a sample solution (col. 13, lines 22-29; fig. 24). The waveguide is illuminated by one or more different wavelength of light appropriate to excite all the fluorophores located within the evanescent region of the waveguide (col. 13, lines 34-37). If spatial resolution is desired in

Art Unit: 1639

addition to wavelength selection, the light passing through the filter passes through a second lens which image the light onto a spatially-resolved photodetector such as a CCD or diode array (col. 13, lines 48-54).

Response to Arguments

9. Applicant's argument directed to the above rejection under 35 USC 102(e) as being anticipated by Herron et al. (US Patent 6,108,463; *102(e) date 8/18/1998*) for claim 58 was considered but they are not persuasive for the following reasons.

Applicant contends that the system of Herron et al. does not anticipate the presently claimed system because 1) “[C]laim 58, as currently amended, recites labels comprising a plurality of signals, each signal generating an identifiable wavelength in response to an excitation energy”, and 2) Herron et al. fails to teach “[a] detector for simultaneously imaging spectra upon a surface of a sensor”. Thus, the system of Herron et al. does not anticipate the presently claimed system.

Applicant’s argument that Herron et al. do not teach the limitation of “*labels comprising a plurality of signals, each signal generating an identifiable wavelength in response to an excitation energy*” as recited in claim 58 is moot since this limitation is not found in claim 58. Applicant’s argument that Herron et al. do not teach “[a] detector for simultaneously imaging spectra upon a surface of a sensor” is not convincing since Herron et al. do teach this limitation. Herron et al. disclose that light is imaged (spectra) onto a spatially resolved photodetector such as a CCD or diode array (col. 13, lines 50-54). Therefore, the system of Herron et al. does anticipate the presently claimed system.

Claim Rejections - 35 USC § 103

10. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

11. Claims 1, 3-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kauvar et al. (US Patent 6,492,125 B2) and Bawendi et al (US Patent 6,326,144 B1).

The instant claimed "system" comprises of a plurality of labels generating identifiable spectra, a first family of the labels generating identifiable spectra having first signal, and a detector. The spectra comprise a plurality of signals for each label. The first label of the first family included an associated second signal. The labels comprise of semiconductor nanocrystal.

Kauvar et al. disclose labels (system) that are particulate materials, which contain a least two different signal-generating moieties (col. 2, lines 39-41). The moieties generating signals that can be distinguished in situ, such as light of different wavelengths (col. 2, lines 56-61). These labels are distinguishable by any instrumentation which contains separate means for each of the at least two in situ signals generated. The detector comprise of appropriate filters or other means, such as prism or grating (col. 2, lines 61-65).

The system of Kauvar et al. does not expressly disclose that the label is semiconductor nanocrystal.

Bawendi et al. disclose a system that include of a plurality of labels generating identifiable spectra in response to excitation energy (col. 3, line 32-35; col. 3, line 60-67; col. 5, line 37-40) and a detector imaging at least some of the spectra for identification of the labels (col. 3, line 39-40; col. 15, line 36-41). The spectra comprise a plurality of signals defining a

Art Unit: 1639

plurality of wavelengths (col. 3, line 60-67). The labels comprise semiconductor nanocrystal (col. 3, line 32-35). Each labels comprises at least one population of semiconductor nanocrystals, each population generating a signal having a population wavelength in response to the excitation energy (col. 3, line 36-41; col. 5, line 37-50). Some of the labels are linked to the substrate and bound to the array (matrix) (col. 12, line 27-34). The system also includes a probe body including a label and an associated assay indicator marker, which generate a signal in response to an interaction between the probe body and an associated test substance so as to indicate results of an assay (col. 14, line 32-39). The indicator markers are generating indicator signals in response to an interaction between the probe body and an associated test substance so as to indicate results of an assay (col.14, line 32-39). The imaged labels are distributed across a two dimensional sensing field (col. 16, line 11-23 and 29-37).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the label is semiconductor nanocrystal as taught by Bawendi et al. in the system of Kauvar et al. One of ordinary skill in the art would have been motivated to include the label is semiconductor nanocrystal in the system of Kauvar et al. for the advantage of providing for high resolution of multiply-sized fluorescent semiconductor nanocrystal within a system and being enables to examine simultaneously a variety of biological moieties tagged with the fluorescent semiconductor nanocrystal (Bawendi: col. 3, lines 56-59).

Response to Arguments

12. Applicant's argument directed to the above rejection under 35 USC 103(a) as being unpatentable over Kauvar et al. (US Patent 6,492,125 B2) and Bawendi et al. (US Patent

Art Unit: 1639

6,326,144 B1) for claims 1, 3-7 was considered but they are not persuasive for the following reasons.

Applicant alleges that the combination of Kauvar et al. and Bawendi et al. is non-obvious over the presently claimed system because 1) Kauvar et al. does not teach the limitation of “[a] detector that simultaneously images spectra of a plurality of labels upon a surface”, and 2) Kauvar et al. does not provide any suggestion or motivation to combine with Bawendi et al.. Thus the combination of Kauvar et al. and Bawendi et al. is non-obvious over the presently claimed system.

Applicant’s argument that Kauvar et al. does not teach the limitation of “[a] detector that simultaneously images spectra of a plurality of labels upon a surface” is not convincing since Kauvar et al. do teach this limitation. Kauvar et al. disclose that a detector that provides fluorescence excitation and the capacity to detect three separate wavelength of light (col. 4, lines 63-64). In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation to combine is provided by Bawendi et al. in that the semiconductor nanocrystal would provide a higher resolution of the emission spectra (col. 3, lines 54-59). Therefore the combination of Kauvar et al. and Bawendi et al. is obvious over the presently claimed system

13. Claims 8-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bawendi et al (US Patent 6,326,144 B1) and Kauvar et al. (US Patent 6,492,125 B2) as applied to claims 1 and 3-7 above, and further in view of either Lewis et al (US Patent 5,377,003) or Nagoshi et al. (US Patent 5,495,334).

The instant claimed "system" comprises of a plurality of labels generating identifiable spectra, a first family of the labels generating identifiable spectra having first signal, and a detector. The spectra comprise a plurality of signals for each label. The first label of the first family included an associated second signal. The labels comprise of semiconductor nanocrystal. The detector comprises a diffractor and a sensor.

The system of Kauvar et al. and Bawendi et al. is disclosed above.

The system of Kauvar et al. and Bawendi et al. differs from the claimed invention in failing to specifically disclose the components of an optical system such as a diffractor, grating, a beam splitter, spatial position indicator, and areal sensor (CCD).

Lewis et al. and Nagoshi et al. disclose a spectroscopic imaging system, which includes a diffractor, grating, a beam splitter, spatial position indicator, and areal sensor (CCD) indicator for a two-dimensional detector (Lewis: Abstract; fig. 10B and 11B; col. 15, line 18-45; Nagoshi: Abstract; col. 1, line 20-31; col. 2, line 65-67 and continue through col. 3, line 1-31) for the advantage of rapidly and simultaneously recording and analyzing thousands of absorption

Art Unit: 1639

spectra with high spatial resolution (Lewis: col. 5, line 12-15). Further, such optical components are considered conventional and required in an optical system.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Kauvar et al. and Bawendi et al. by including a diffractor, grating, a beam splitter, spatial position indicator, and areal sensor (CCD) as taught by Lewis et al. or Nagoshi et al. for the advantage of rapidly and simultaneously recording and analyzing thousands of absorption spectra with high spatial resolution.

Response to Arguments

14. Applicant's argument directed to the above rejection under 35 USC 103(a) as being unpatentable over Bawendi et al (US Patent 6,326,144 B1) and Kauvar et al. (US Patent 6,492,125 B2) as applied to claims 1 and 3-7 above, and further in view of either Lewis et al (US Patent 5,377,003) or Nagoshi et al. (US Patent 5,495,334) for claims 8-19 was considered but they are not persuasive for the following reasons.

Applicant contends that the combination of Kauvar et al., Bawendi et al., and either Lewis et al. or Nagoshi et al. is non-obvious over the presently claimed system because 1) Kauvar et al. does not teach the limitation of “[a] detector that simultaneously images spectra of a plurality of labels upon a surface”, and 2) Kauvar et al. does not provide any suggestion or motivation to combine with Bawendi et al. Thus the combination of Kauvar et al. and Bawendi et al. is non-obvious over the presently claimed system.

Applicant's argument that Kauvar et al. does not teach the limitation of “[a] detector that simultaneously images spectra of a plurality of labels upon a surface” is not convincing since Kauvar et al. do teach this limitation. Kauvar et al. disclose that a detector that provides

Art Unit: 1639

fluorescence excitation and the capacity to detect three separate wavelength of light (col. 4, lines 63-64). In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation to combine is provided by Lewis et al. in that the components of an optical system would provide the advantage of rapidly and simultaneously recording and analyzing thousands of absorption spectra with high spatial resolution. Therefore, that the combination of Kauvar et al., Bawendi et al., and either Lewis et al. or Nagoshi et al. is obvious over the presently claimed system.

New Rejections – Necessitated by Amendment

Claim Rejections - 35 USC § 112

15. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

16. Claim 68 recites the limitation "no slit aperture" in line 1. There is insufficient antecedent basis for this limitation in the claim 59.

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

18. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

19. Claims 58, and 60-64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Herron et al. (US Patent 6,108,463; *102(e) date 8/18/1998*) and Bawendi et al (US Patent 6,326,144 B1).

Herron et al. disclose a waveguide sensor (system) that comprise of different capture molecules, tracer molecules, and labels with the purpose of detecting different analytes of interest in a sample solution (col. 13, lines 22-29; fig. 24). The waveguide is illuminated by one or more different wavelength of light appropriate to excite all the fluorophores located within the evanescent region of the waveguide (col. 13, lines 34-37). If spatial resolution is desired in addition to wavelength selection, the light passing through the filter passes through a second lens

Art Unit: 1639

which image the light onto a spatially-resolved photodetector such as a CCD or diode array (col. 13, lines 48-54).

The system of Herron et al. does not expressly disclose that the label is semiconductor nanocrystal.

Bawendi et al. disclose a system that include of a plurality of labels generating identifiable spectra in response to excitation energy (col. 3, line 32-35; col. 3, line 60-67; col. 5, line 37-40) and a detector imaging at least some of the spectra for identification of the labels (col. 3, line 39-40; col. 15, line 36-41). The spectra comprise a plurality of signals defining a plurality of wavelengths (col. 3, line 60-67). The labels comprise semiconductor nanocrystal (col. 3, line 32-35). Each labels comprises at least one population of semiconductor nanocrystals, each population generating a signal having a population wavelength in response to the excitation energy (col. 3, line 36-41; col. 5, line 37-50). Some of the labels are linked to the substrate and bound to the array (matrix) (col. 12, line 27-34). The system also includes a probe body including a label and an associated assay indicator marker, which generate a signal in response to an interaction between the probe body and an associated test substance so as to indicate results of an assay (col. 14, line 32-39). The indicator markers are generating indicator signals in response to an interaction between the probe body and an associated test substance so as to indicate results of an assay (col.14, line 32-39). The imaged labels are distributed across a two dimensional sensing field (col. 16, line 11-23 and 29-37).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the label is semiconductor nanocrystal as taught by Bawendi et al. in the system of Herron et al. One of ordinary skill in the art would have been motivated to

Art Unit: 1639

include the label is semiconductor nanocrystal in the system of Herron et al. for the advantage of providing for high resolution of multiply-sized fluorescent semiconductor nanocrystal within a system and being enables to examine simultaneously a variety of biological moieties tagged with the fluorescent semiconductor nanocrystal (Bawendi: col. 3, lines 56-59). One of ordinary skill in the art would have reasonably expectation of success in the combination of Herron et al. and Bawendi et al because both disclose the method of biological assay using fluorescent labels.

20. Claims 65-67, and 69-75 are rejected under 35 U.S.C. 103(a) as being unpatentable over Herron et al. (US Patent 6,108,463; *102(e) date 8/18/1998*) and Bawendi et al (US Patent 6,326,144 B1) as applied to claims 58, and 60-64 above, and further in view of either Lewis et al (US Patent 5,377,003) or Nagoshi et al. (US Patent 5,495,334).

Herron et al. disclose a waveguide sensor (system) that comprise of different capture molecules, tracer molecules, and labels with the purpose of detecting different analytes of interest in a sample solution (col. 13, lines 22-29; fig. 24). The waveguide is illuminated by one or more different wavelength of light appropriate to excite all the fluorophores located within the evanescent region of the waveguide (col. 13, lines 34-37). If spatial resolution is desired in addition to wavelength selection, the light passing through the filter passes through a second lens which image the light onto a spatially-resolved photodetector such as a CCD or diode array (col. 13, lines 48-54).

Bawendi et al. disclose a system that include of a plurality of labels generating identifiable spectra in response to excitation energy (col. 3, line 32-35; col. 3, line 60-67; col. 5, line 37-40) and a detector imaging at least some of the spectra for identification of the labels

Art Unit: 1639

(col. 3, line 39-40; col. 15, line 36-41). The spectra comprise a plurality of signals defining a plurality of wavelengths (col. 3, line 60-67). The labels comprise semiconductor nanocrystal (col. 3, line 32-35). Each labels comprises at least one population of semiconductor nanocrystals, each population generating a signal having a population wavelength in response to the excitation energy (col. 3, line 36-41; col. 5, line 37-50). Some of the labels are linked to the substrate and bound to the array (matrix) (col. 12, line 27-34). The system also includes a probe body including a label and an associated assay indicator marker, which generate a signal in response to an interaction between the probe body and an associated test substance so as to indicate results of an assay (col. 14, line 32-39). The indicator markers are generating indicator signals in response to an interaction between the probe body and an associated test substance so as to indicate results of an assay (col.14, line 32-39). The imaged labels are distributed across a two dimensional sensing field (col. 16, line 11-23 and 29-37).

The system of Herron et al. and Bawendi et al does not expressly disclose the components of an optical system such as a diffractor, grating, a beam splitter, spatial position indicator, and areal sensor (CCD).

Lewis et al. and Nagoshi et al. disclose a spectroscopic imaging system, which includes a diffractor, grating, a beam splitter, spatial position indicator, and areal sensor (CCD) indicator for a two-dimensional detector (Lewis: Abstract; fig. 10B and 11B; col. 15, line 18-45; Nagoshi: Abstract; col. 1, line 20-31; col. 2, line 65-67 and continue through col. 3, line 1-31) for the advantage of rapidly and simultaneously recording and analyzing thousands of absorption spectra with high spatial resolution (Lewis: col. 5, line 12-15). Further, such optical components are considered conventional and required in an optical system.

Art Unit: 1639

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Herron et al. and Bawendi et al. by including a diffractor, grating, a beam splitter, spatial position indicator, and areal sensor (CCD) as taught by Lewis et al. or Nagoshi et al. for the advantage of rapidly and simultaneously recording and analyzing thousands of absorption spectra with high spatial resolution.

Conclusion

21. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to My-Chau T. Tran whose telephone number is 703-305-6999. The examiner can normally be reached on Monday: 8:00-2:30; Tuesday-Thursday: 7:30-5:00; Friday: 8:00-3:30.

Art Unit: 1639

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew J. Wang can be reached on 703-306-3217. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1235.

mct

November 7, 2003


PADMASHRI PONNALURI
PRIMARY EXAMINER